



Aims of the workshop

- align educational beliefs and values to reflect those of the IB in order to create a challenging programme of international education
- develop an understanding of the structures and principles of the subject group framework and guidelines
- prepare teaching strategies and to design tasks that will support the implementation of the subject group and guidelines
- engage in relevant, significant, challenging student centered environments.



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Middle Years
Programme

Session 1 – Philosophy



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Session objectives

- align elements of the IB programme standards and practices (A, B, C) to use as a guide for decisions regarding implementation of the programme.
- share perspectives and challenges on education in our ever-changing world that impact MYP implementation in the subject group



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What do you want to know?

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The International Baccalaureate Organization aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.

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IB learner profile

The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

Thinking about our teaching practice

What do students need in order to be successful in today's world?

What does it mean to be a teacher in our ever changing world?



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Learners of the new millennium – See, think, wonder



What do you see?

...

What do you think?

...

What does it make you wonder?

...



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"See, Think, Wonder" routine developed by Project Zero at the Harvard Graduate School of Education.

The IB continuum of international education

IB mission statement

IB learner profile

Programme standards and practices



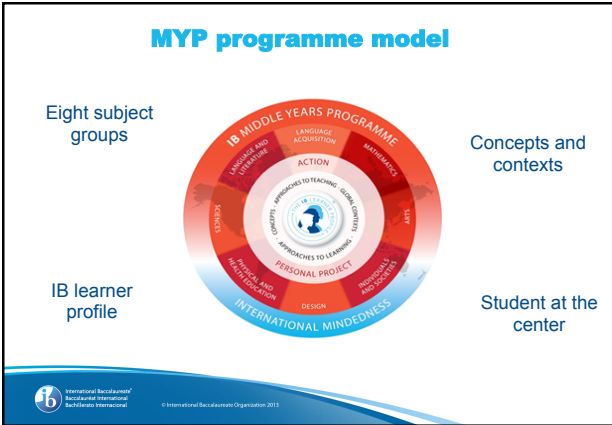
THE IB CONTINUUM

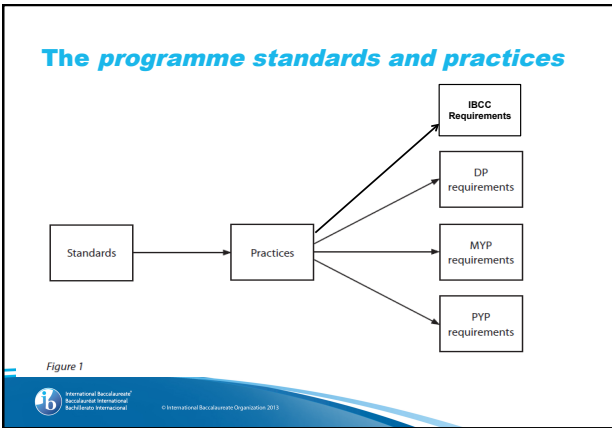
PYP MYP DP IBCC

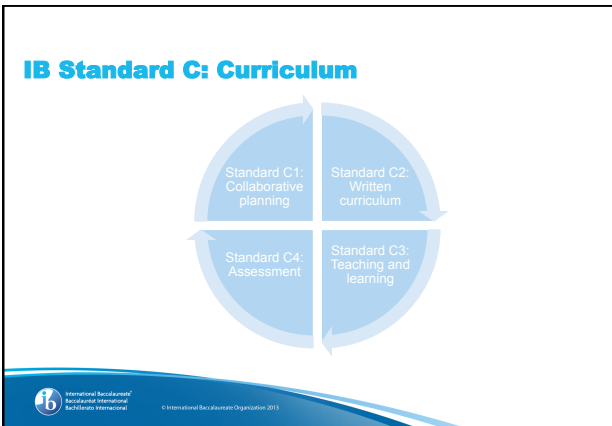


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Programme standards and practices

Using your given curriculum *programme standards and practices* discuss and answer these two questions **for your assigned standard**:

- How do the *programme standards and practices* impact directly on planning for teaching and learning in sciences?
- How am I meeting this standard currently?



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Visible thinking: Headlines



<http://www.fodey.com/generators/newspaper/snippet.asp>



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Middle Years
Programme

Session 2 – Written curriculum: Aims, objectives and requirements



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Session objectives

- develop an understanding of the aims, objectives, and requirements of the subject group, including interdisciplinary planning
- compare year 1, 3, and 5 subject group objectives
- consider the impact of the horizontal and vertical curriculum plan for the subject group
- interact with and explore the subject-specific teaching and learning resources (TSMs)



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Activating the aims: Sciences

- The aims of any MYP subject state in a general way what the teacher may expect to teach or do, and what the student may expect to experience or learn.
- In addition, they suggest how the student may be changed by the learning experience.

At your tables:

- Discuss what you believe are the true aims of science and why?
- Would there be another aim that you would add to those already in your subject group guide?



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Aims and the learner profile: Sciences

Consider the MYP sciences curriculum and how it relates to the IB learner profile.

After reading the MYP sciences aims, identify how they relate to the attributes of the IB learner profile.

Sciences aims	Learner profile attributes	Briefly justify
1		
2		
3		
4		
5		
6		



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Envelope Jigsaw



At your table...

1. Open the envelope with 16 objective strands from the sciences objectives.
2. Group these strands into four categories.
3. On "GO!" rotate one table to your left.
4. Study the new groups' organization of the four categories.
5. Change one strand that your group agrees does not fit in that category.
6. Report back your groups' findings and changes with justifications.



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Scavenger hunt

Go back to your Subject group guide to find:

- Objectives
- Requirements
- Interdisciplinary teaching and learning requirements



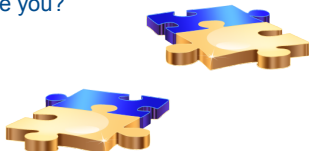
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Editing your jigsaw

Using the guide review/reflect on your groupings of the strands.

- How accurate were you?
- Surprises?
- Questions?



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Objectives: Sciences

The **objectives** of any MYP subject group state the specific targets that are set for learning in that subject.

A – Knowing and understanding
B – Inquiring and designing
C – Processing and evaluating
D – Reflecting on the impacts of science

- They define what the student will be able to accomplish as a result of studying sciences
- The objectives of MYP sciences encompass the factual, conceptual, procedural and metacognitive dimensions of knowledge.
- Each objective is elaborated by a number of strands; a strand is an aspect or indicator of the learning expectation.



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Sciences 1-3-5 objectives alignment

- Command terms
- Specifically designed for MYP progression
- Age-appropriate



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Best fit: Sciences

Knowing and understanding	Inquiring and designing	Processing and evaluating	Reflecting on the impacts of science

Where do the aims "fit best?"

- Plot each aim under the objective where it best fits.
- Each aim can only be placed once



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Sciences requirements

Must

- 50 Teaching hours per year minimum (Guide p. 17)
- The school curriculum must include at least one course from this subject group in each year of the MYP
- All objective strands addressed twice per year (minimum)
- MYP students are required to independently complete a **scientific investigation** that is assessed against **criterion B** (inquiring and designing) and **criterion C** (processing and evaluating). (Guide p. 17)

Consider

- Developing courses (years 1-5) that promote range within the subject group.



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The six thinking hats

Which of the requirements might not work?



What are some challenges the requirements present for your school?



What excites you about the requirements? What are the potential curriculum improvements?



What are some of the reasons these requirements have been put in place?



How do you feel about these requirements?



What ideas do you have for implementing the requirements?



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Aligning school curriculum content with objectives

MYP subject-specific objectives

Objective A

Objective B

Objective C

Merging
your
school
curriculum
within the
MYP
framework



School curriculum content

Topic : _____

At the end of the course, students should:

A format for horizontal and vertical planning

Time frame	Unit Title	Key and Related Concepts	Global context and exploration	Statement of inquiry	Objective/ Objective strands	ATL skills	Content

Reflection

I used to think...
Now I think...



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Session 3 – Written curriculum: Concepts and context



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Session objectives

- develop an understanding of the concept-based approach in the MYP to include the structure of knowledge
- introduce subject-specific key and related concepts
- develop an understanding of MYP global contexts to ensure meaningful, relevant and engaging learning experiences



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Snap shots!

Topics



Concepts

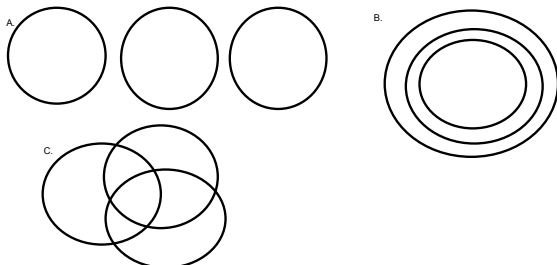
Skills



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Which graphic best represents the relationship among topics, concepts and skills?



MYP: A concept-driven framework

- The MYP offers a flexible curricular framework that allows the demands of national, state or local requirements to be met while maintaining the IB mission and philosophy.
- Consider the content of a unit of study, then “unpack” the content to reveal the major concepts.



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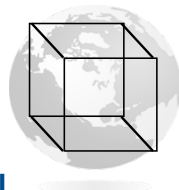
Concept-driven curriculum

**Facts
+
Skills**



or...

**Facts
+
Skills
+
Conceptual
Understanding**



set in global contexts



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What is a concept?

DEFINITION:

Concepts bring focus & depth to study & lead students to enduring understanding.

“A concept serves as an integrating lens” and encourages the transfer of ideas within and across the disciplines “as students search for patterns and connections in the creation of new knowledge.”

(Erickson 2008)

CHARACTERISTICS:

Timeless, Universal, Abstract

Represented by one or two words, or a short phrase

Specific examples of the concept reflect common attributes

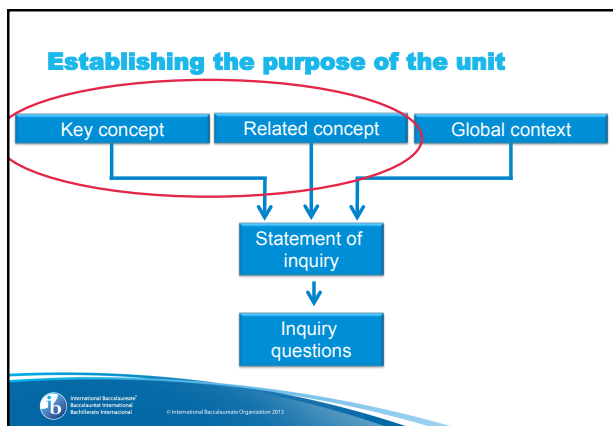
Concepts

SUBJECT SPECIFIC EXAMPLES:

Change, Relationships, Systems, Consequences, Energy, Evidence, Form, Function, Interaction, Models, Movement, Patterns, Transformation

CONCEPTS ARE:

Not skills
Not topics



Key concepts

- Represented by one or two words
- Used in all subject groups in order to develop breadth of understanding and promote disciplinary and interdisciplinary learning
- **Sixteen prescribed key concepts**, each contributed by one or more of the eight subject groups
- Sciences have 3 key concepts that are recommended for use each year of the programme

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Key concepts – Sciences

Aesthetics	Change	Communication	Communities
Connections	Creativity	Culture	Development
Form	Global interactions	Identity	Logic
Perspective	Relationships	Time, place and space	Systems

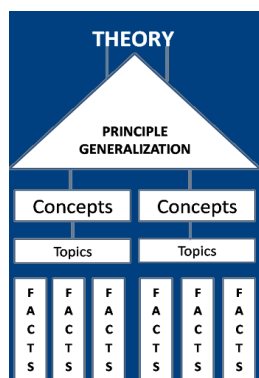
Related concepts

- while the key concepts provide breadth, related concepts provide depth for inquiry
- move beyond facts and topics to engage higher order thinking skills that students need to be critical and creative
- twelve prescribed related concepts for each discipline to be used over the course of the school's programme



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How do concepts fit into the overall structure of knowledge?

What is their relationship between topics, facts, and skills?

© 2011 H. Lynn Erickson - See presentation at IB conference

Check understanding: Topics or concepts?

- Timeless?
- Universal?
- Abstract?
- Represented by 1 or 2 words?

Energy
Photosynthesis
Models
Mechanics
Cells
Combustion
Systems
Interaction
Atomic structure
Thermodynamics
Transformation



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Your turn! Let's start a unit!

In groups of 3:

- Choose a topic
- Choose a key concept then answer: "Why that one?"
- Choose two related concepts then answer: "Why those?"

EXAMPLE TOPICS

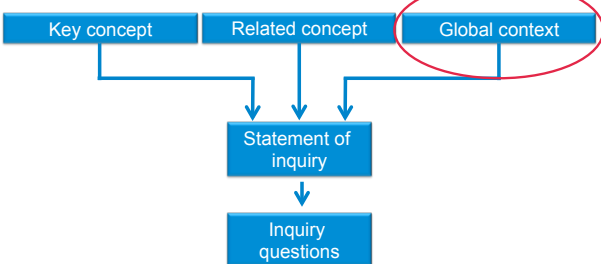
Digestion	Ecology	Food chains
Acids & bases	Ionic compounds	Metals
Magnetism	Electric circuits	Velocity & acceleration



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Establishing the purpose of the unit



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Global contexts

- IB programmes aim to develop international mindedness in a global context.
- Allow for relevance, engagement and a direct route for inquiry into next millennium perspectives. All effective learning is contextual. Helps answer the question: "Why are we learning this?"
- Global contexts make learning relevant and enable students to develop competencies and personal values necessary for global engagement.
- Students will do this through exploring personal, local, national and/or international issues and ideas of global significance.

The MYP global contexts



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Matching the global context and their descriptors

Match the global context



with the appropriate descriptor



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Global contexts

Globalization and sustainability

Global context

Students will explore the interconnectedness of human-made systems and communities; the relationship between local and global processes; how local experiences mediate the global; reflect on the opportunities and tensions provided by world-interconnectedness; the impact of decision-making on humankind and the environment.

Descriptor



Your turn... with your table group topic

Fairness and development

PICK A GLOBAL CONTEXT

Students will explore rights and responsibilities; the relationship between communities; *sharing finite resources with other people and with other living things*; access to equal opportunities; peace and conflict resolution.

PICK AN EXPLORATION


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Tweet It! IB MYP @ibmyp


- In 140 characters or less

*What do global contexts do?.....
If you have twitter
feel free to tweet this*

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Middle Years Programme


Session 4 – Written curriculum: Inquiry

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Session objectives

- develop an understanding of how concepts and context are synthesized into a statement of inquiry
- develop an understanding of student and teacher questions to guide inquiry (factual, conceptual, debatable)
- explore how the inquiry cycle can frame meaningful, relevant, and engaging classroom learning

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Establishing the purpose of the unit


Key concept

Related concept

Global context

Statement of inquiry

Inquiry questions

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Inquiry based learning

"If you envisioned images of children actively posing questions, seeking answers to questions that they care about, demonstrating a strong interest in outcomes, and discussing their theories and ideas with others, you've shared in a glimpse of what makes educators so excited about the possibilities of inquiry-based learning. At its best, inquiry-based learning makes excellent educational sense."



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Extracts: Grotzer, The Keys to Inquiry in
<http://blogs.educationprojectzero.org/2013/03/05/inquiry-1-forms-project-zero-harvard-graduate-school-of-education/>

Sensory Inquiry

In your table group complete the "Looks like, feels like, sounds like" routine below:

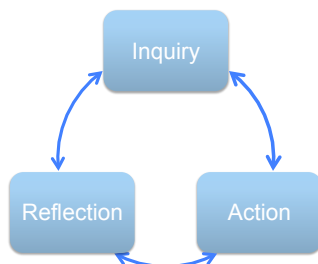
Inquiry in the disciplines		
Looks like...	Feels like...	Sounds like...
Collaboration	Supportive learning environment	Students asking meaningful questions



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The Inquiry cycle



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Recap...

1. We have identified key and related concepts for table group unit
2. We have ensured that we have a meaningful global context and its exploration



Moving forward we will....

3. Synthesize and merge the concepts into a conceptual understanding.
4. We will contextualize the conceptual understanding into a statement of inquiry.
5. We will unpack the Statement of inquiry through inquiry questions.



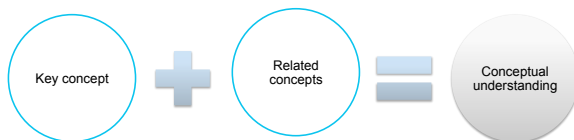
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The statement of inquiry...

- is a sentence which synthesizes the key concept, one or more related concepts, and the global context
- facilitates synergistic thinking
- may provide for a universal understanding
- focuses the unit
- is directly tied to the summative assessment.

Let's get started...



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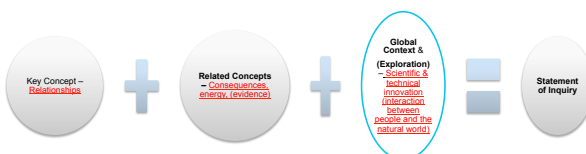
Developing a conceptual understanding



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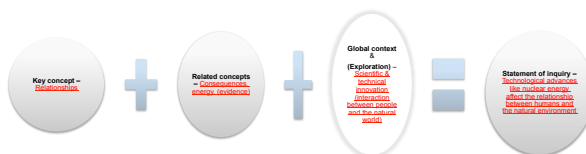
Contextualizing the conceptual understanding



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The statement of inquiry

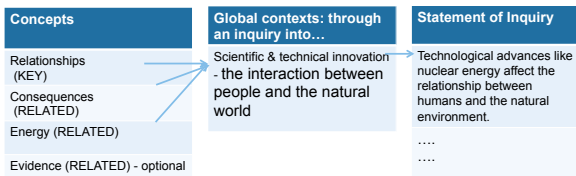


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Putting it all together

The example shows how a science teacher has used a global context and concepts for a unit on "Nuclear energy" to develop a statement of inquiry.



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Some helpful hints:

The statement of inquiry:

- should not use proper or personal nouns, or pronouns
- should have a present tense verb and contain at least two concepts and make a reference to a global context and its exploration
- is a transferable idea
- may need a qualifier (often, may, can) if it is not true in all situations.



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Establishing the purpose of the unit

Key concept	Related concept(s)	Global Context
Statement of inquiry		

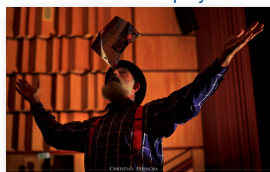


Your turn! Develop a statement of inquiry:

In your table groups:

1. Use your selected Key concept and Related concept(s)
2. Develop a conceptual understanding
3. Use your selected Global context exploration in order to contextualize a conceptual understanding

Voilà! You've just written a statement of inquiry!



To check if this statement is appropriate:
Ask : "So what? Why is this important to understand?"



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KEY and RELATED CONCEPTS



Gallery walk



- Post your table group's statement of inquiry on the wall.
- As a table group, move from statement to statement and provide critical feedback using sticky notes.
- Return to your table group to incorporate feedback as necessary.



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Inquiry questions

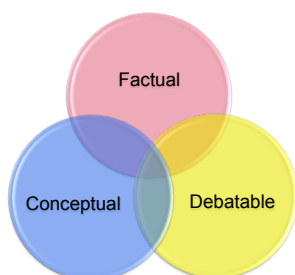
- **Teachers** develop inquiry questions in order to explore the statement of inquiry, and to ensure adequate conceptual depth.
- **Students** may develop their own questions throughout the unit in order to satisfy curiosity and deepen understanding.



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Types of inquiry questions



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Criteria for developing inquiry questions

Factual	Can use starters "What..." Open questions which you might Google but find many variations in your answers. <i>E.g.</i> What technologies are available for producing electrical energy at an industrial scale?
Conceptual	Can use starters "How..." or "Why..." Open ended questions which unpack a concept from the statement of inquiry <i>E.g.</i> How might the development of nuclear power for electricity production affect the environment?
Debatable	Can use starters "Do..." or "Is..." Debatable questions provoke discussion. <i>E.g.</i> Is carbon trading fair to poor, developing and industrialized nations?



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Using lines of inquiry ...

Topic: Acids and bases

Key Concept: Systems

Related Concepts: Transformation, balance

Global Context: Scientific and technical innovation

Factual

Line of Inquiry: Students will investigate the presence of acids or bases as active ingredients in a variety of household products.

- Which acids or bases do we use in our homes?

Conceptual

Line of Inquiry: Students will inquire into typical reactions of acids and bases and their mechanisms in order to better understand how they can be used.

- How do chemical reactions produce new substances?
- How can a balance be achieved in chemical reactions?

Debatable/
provocative

Line of Inquiry: Students will explore the uses and dangers of acids and bases in household chemicals.

- Under what conditions should powerful chemicals be sold for use in the home?

Try it for yourself ?

Back to your table group unit!

Formulate 3 inquiry questions

- 1 factual
- 1 conceptual
- 1 debatable



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Reflection


After today's sessions, reflect upon something that you feel...

Confident about?
Comfortable with?
Concerned about?



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Middle Years
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Session 5 –

Assessed curriculum: Summative assessment




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Session objectives

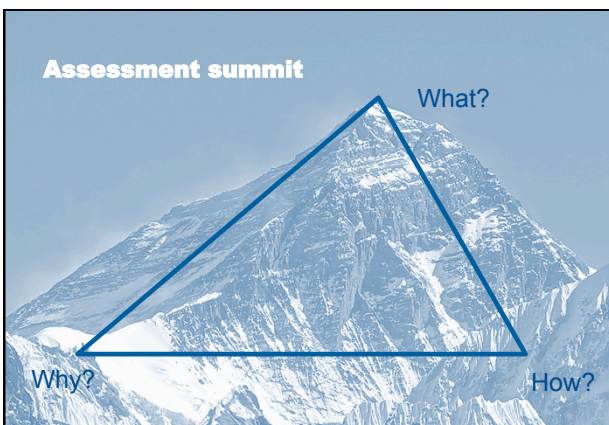
- Discuss the design principles of summative assessment task(s) in relation to the subject group requirements and objectives
- Develop an understanding of the relationship between the statement of inquiry and the summative assessment task



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Assessment summit



What is assessment?

The process of collecting and analysing information about the students' achievements to improve teaching and enhance learning.



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Why do we assess?

Administrative: grading, promotion to next grade/level, certification, etc

Guidance: choice of courses, career orientation

Diagnostic: identifying strengths and weaknesses of students; needed for classroom instruction and curriculum planning

Informative: feedback to parents and administrators

Formative: feedback to students and teachers for curriculum planning

Lesson planning: documenting and monitoring learning and understanding

Motivation and self-reflection of teaching and learning: curriculum development, class instruction

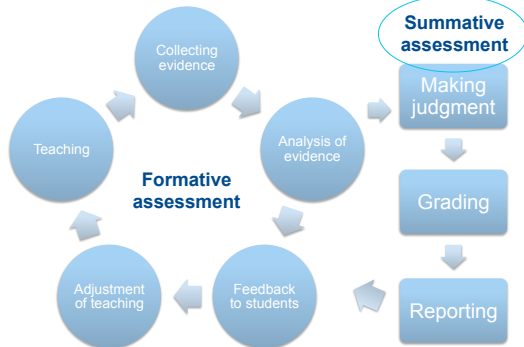
Student motivation?



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How do we assess?



The Ice Man – what killed him?

Global Context: Orientation in Space and Time

Introduction

In this project you will become a historical detective in collaboration with another student. You will gather evidence through research, create a theory, and support it with organized and relevant evidence in a persuasive presentation using your chosen method of presentation. When you present to persuade, you should always have a definite opinion about the topic! Persuading someone to think the way you do requires careful thinking and planning. You must make your group's position clear to your audience and include facts and reasons that will strongly support your group's opinion. You will have an opportunity at the conclusion of this Unit to reflect on your learning independently in a short piece of writing in class.



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Summative assessment



- judgment made by teachers at predetermined intervals
- is a performance-based assessment
- based on subject-specific objectives that have been shared with students at the outset of the unit



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Aligning objectives and criteria

MYP objectives

Objective A

Students should be able to:

- _____
- _____
- _____

Objective B

Students should be able to:

- _____
- _____
- _____

Objective C

Students should be able to:

- _____
- _____
- _____

MYP criterion A

Students should be able to:

- Explain scientific knowledge
- Apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations
- Analyse and evaluate information to make scientifically supported judgements.

Achievement Level	Descriptors
1	
2	
3	
4	



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The 1, 3 and 5 of objectives and criteria

In pairs, refer to your subject group guide to find:

- Year 1 objectives for criterion A
- Year 3 objectives for criterion B
- Year 5 objectives for criterion C



Careful! Which criteria* do these *each* align with?

*Found near the end of your guide.



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The 1, 2 and 3 of summative assessment

Summative assessment		
Objectives:	Outline of summative assessment task(s):	Relationship between summative assessment task(s) and statement of inquiry:
2	1	3
Approaches to learning (ATL)		

Your turn!

Using the statement of inquiry developed by your table group in the previous session:

- Brainstorm a list of potential summative assessment tasks that would let students show their understanding of this key learning.



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Select a summative assessment task

Summative assessment		
Objectives:	Outline of summative assessment task(s):	Relationship between summative assessment task(s) and statement of inquiry:
	Lab report	
<div style="background-color: #0056b3; color: white; text-align: center; padding: 5px;"> CHOOSE A TASK THAT WILL BE THE BEST TO ASSESS THE STATEMENT OF INQUIRY </div>		
Approaches to learning (ATL)		

Summative assessment task and the MYP objective

Using the summative assessment task that your table group has chosen:

- Consider the key learning outcomes for students.
- Refer to the MYP objectives near the beginning of your guide in order to choose two that align best with the summative task.
- For further refinement:
 - Each objective is broken into objective strands.
 - Choose one or two objective strands for each objective that you have chosen



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Summative assessment

Summative assessment		
Objectives:	Outline of summative assessment task(s):	Relationship between summative assessment task(s) and statement of inquiry:
EXAMPLE: For year 5, B: Inquiring and designing (strand) Design scientific investigations C: Processing and evaluating (strand) Present collected and transformed data (strand) Interpret data and explain results using scientific reasoning.	Lab report	
Approaches to learning (ATL)		

Objective / criteria alignment

Objectives and their strands:

What we want students to demonstrate.

Criteria:

A measurement of how well students have achieved against the objective /strand.

C: Processing and evaluating

At the end of year 5, students should be able to:

- present collected and transformed data
- interpret data and explain results using scientific reasoning
- evaluate the validity of hypotheses based on the evidence of scientific investigation
- evaluate the validity of the method
- evaluate assessment tasks in relation to the method

Assessment level	Level description
4	The student can identify a method that they use in the laboratory.
3.5	The student can identify a method that they use in the laboratory.
3	The student can identify a method that they use in the laboratory.
2.5	The student can identify a method that they use in the laboratory.
2	The student can identify a method that they use in the laboratory.
1.5	The student can identify a method that they use in the laboratory.
1	The student can identify a method that they use in the laboratory.
0.5	The student can identify a method that they use in the laboratory.
0	The student can identify a method that they use in the laboratory.

Statement of Inquiry and the summative assessment task

At your table group

- Discuss the relationship between your summative assessment task and the statement of inquiry.

Then answer:

- How can you design assessment tasks that refer back to the statement of inquiry?
 - Write this relationship in box number 3

Summative assessment

Summative assessment	Outline of summative assessment task(s):	Relationship between summative assessment task(s) and statement of inquiry:
Objectives: EXAMPLE: For year 5, B: Inquiring and designing (strand) Design scientific investigations C: Processing and evaluating (strand) Present collected and transformed data (strand) Interpret data and explain results using scientific reasoning.	Lab report	Given the aim and variables, students will design the method for a scientific investigation. After carrying out the experiment and collecting data, students will present and interpret their data and explain the results using scientific reasoning. This can lead to a discussion of the potential dangers of household chemicals and the need for suitable precautions.
Approaches to learning (ATL)		

Are we in the zone?

- How does the description of the assessment task allow students to meet the high end of the descriptors?
- How does the assessment task allow students to demonstrate their own understanding of the statement of inquiry?
- Do the objectives and the objective strands that are chosen support the summative task?
- Has the teacher chosen too many or not enough objective strands to unpack realistically in the time frame stated?



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Session 6a – Taught curriculum: Approaches to learning



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Session objectives

- develop an understanding of the approaches to learning (ATL) categories and clusters
- select ATL skills to focus the learning activities in a unit
- align ATL skills with the subject group objective strands



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ATL across the continuum role play

- Communication
- Social
- Self management
- Research
- Thinking



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Approaches to learning (ATL) across the continuum

A skill is the learned capacity to carry out pre-determined results and/or the ability to choose and perform the right technique at the right time, effectively and efficiently.

Take note:

- Skills need to be developed explicitly
- Potentially, any skill can be explored in a given unit, so it is important to be strategic about what skill is most important to develop in a given unit.



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The goal of approaches to learning

ATL is concerned with:

- intellectual disciplines, attitudes, strategies and skills "learning how to learn"
- awareness of thought processes and their strategic use

ATL results in:

- critical, coherent and independent thinking
- capacity for problem solving and decision making

ATL is a shared responsibility:

- core of all curriculum development and all teaching
- logical progression over time



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Finally...



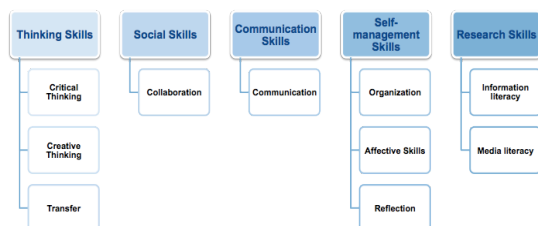
The aim of approaches to learning (ATL) is to produce excellent learners, and ultimately, by the time they leave school, self-regulated learners, absolutely ready for higher level study in the world of commerce, enterprise or academia.



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ATL skill categories and clusters



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The envelope please ...

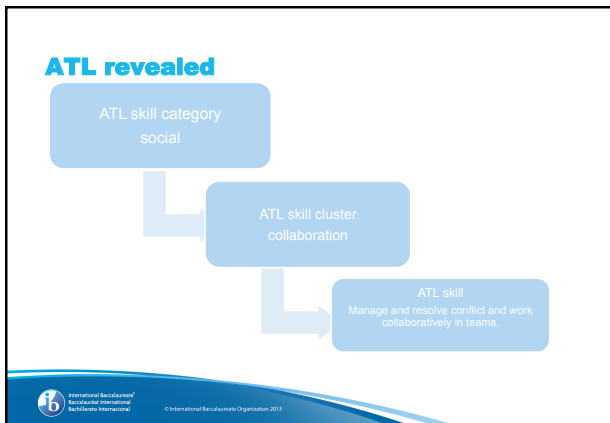
Inside your table group's envelope, you will find strips of paper with individual ATL skills.


- Try matching those skills with the ATL clusters that you've just learned about.
- **Is there more than one cluster that might be an appropriate match for your skill?**



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Consider . . .

What cognitive or affective skills are actually inherent in the objective strand you have chosen?

- ✓ Communication
- ✓ Social
- ✓ Self Management
- ✓ Research
- ✓ Thinking

Ask: In order to master this objective strand, what skill or skills will the student be expected to demonstrate?

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...with an interim objective strand....

Objective D (Reflecting on the impacts of science) (Yr 1)
Strand -
Document the work of others and sources of information used.

In order for students to
[strand:] document the work of others and sources of information used,
students must
[skill indicator:] create references and citations, use footnotes / endnotes and construct a bibliography according to recognized conventions.

(ATL category: research, skill cluster: information literacy skills)

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Completing planning for inquiry

1. Select one of the objective strands from your table group unit
2. Break down the objective strand and then locate the skill within the category and cluster (as shown in the previous slide)
3. Consider your summative assessment task:
Are there any skills that may need to be taught explicitly in order for your students to be successful?

Continue this exercise with at least two separate strands as you complete the ATL section of your planner.



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Debrief

1. How are any of the ATL skills that you chose transferable across clusters?
2. How are these skills transferable across the subject group?
3. Now that we have identified these skills, what do we do with them?



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Golden rule


Create a “golden rule” in order to remember how to select ATL skills for your unit.

Share your golden rules with the group.




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Session 6b– Taught curriculum: Task specific clarifications, formative assessment, differentiation




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Session objectives

- begin to develop task-specific clarifications using the interim criteria and the appropriate strands
- discuss the nature and role of formative learning engagements
- design formative learning engagements that will equip students with the required factual, procedural, and conceptual knowledge that support the summative assessment task(s)
- differentiate teaching and learning in the classroom



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Lights! Camera! Action!

- How can we ensure all students are able to put their learning into action?

List the top 10!

- _____
- _____
- _____
- _____
- _____





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What we can do...



Task-specific
clarifications



Formative
assessment



Differentiation



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Task-specific clarifications

- The criterion descriptors provided in *all subject group guides* are generic. They describe holistic value judgments that measure student achievement.
- Teachers often find it helpful to specify how the objective strands will be assessed in the context of a specific task. For example, with “investigation,” specify “what type.”
- Bring specificity to the criterion descriptor while keeping the “value” of the descriptor and the command terms.



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A strand of clarity

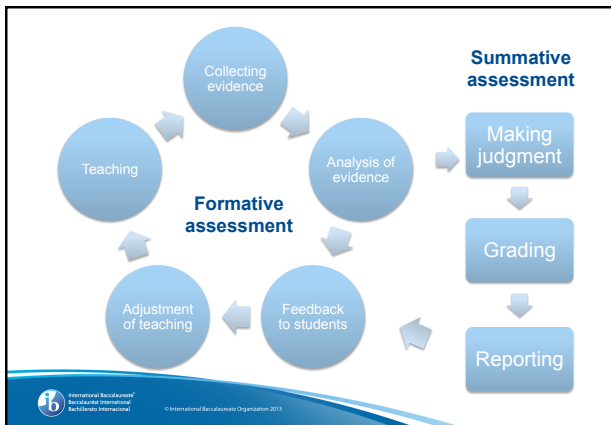
For the unit your table group has been working with:

- Choose one descriptor (strand) from the criterion that you selected and match it with the objective (strand) that you originally chose.
- What word or words might you change to make it more task specific?
- Consider using command terms in the clarification.



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Formative assessment

- part of the learning process
- based on shared objectives
- applied to ongoing work
- regular feedback sessions

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Forming the learning process

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Aligning the teaching and learning process

Action: Teaching and learning through inquiry

Content	Learning process
	Learning experiences and teaching strategies
	Formative assessment
	Differentiation

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What's achieved with the tilt?

Content	Learning experiences and teaching strategies	Formative assessment	Differentiation

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Designing active learning experiences



- Choose one or your own ATL skills from the table group unit
- Design two active learning experiences that will support the development of the skill you have chosen.

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How would you assess each of these learning experiences?

	Learning process
Design a formative assessment that will assess the learning experiences you have designed.	Learning experiences and teaching strategies
	Formative assessment
	Differentiation



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One size doesn't fit all

Differentiation is an approach designed to ensure that what a student learns, how (s)he learns it, and how the student demonstrates what (s)he has learned is a match for the student's readiness level, interests, and preferred mode of learning.



Tomlinson, C. (1999). The differentiated classroom: Responding to the needs of all learners.



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Examples of teaching strategies to differentiate:

- Heterogeneous/homogeneous grouping (depending on aim)
- Choice of content (when we want students to master a skill).
- Choice of form (when we want students to demonstrate understanding of content or concepts)
- Peer tutorials
- Visual aids or adapted readings



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Ensuring learning takes place for all...

	Learning process
How will you differentiate your learning experience and/or your formative assessment?	Learning experiences and teaching strategies
	Formative assessment
	Differentiation



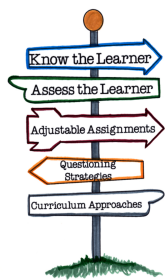
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Reflection in a word...

Share one word in a round robin that you are now thinking about with regard to:

- Task specific clarifications
- Formative assessment
- Differentiation



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Session 7 – Assessed curriculum: Standardization



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Session objectives

- develop an understanding of the practice of standardization
- use assessment criteria to make judgments about student achievement (criterion-related, *best fit*)
- explore the principles behind arriving at a summative grade through recording and reporting



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Reliability

Call out all words that come to your mind when you think about the meaning of **reliability**!

Reliability



Why is reliability such an important concept in our daily lives?

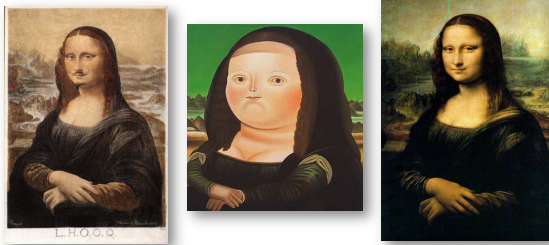
Why is reliability such an important part of our subject group?



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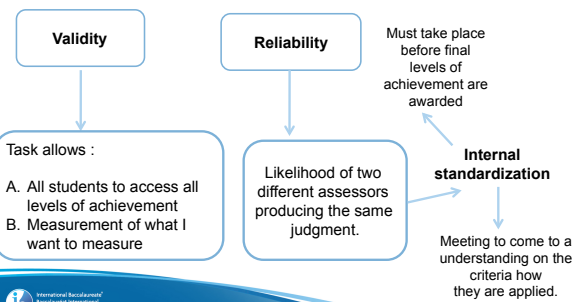
Which is the best?



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When we evaluate we must guarantee:



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Validity of the assessment task

A task that does not allow students to reach all the levels of achievement within a criterion would be invalid, no matter how well designed a rubric might be.

Teachers must ensure that the task allows all students access to all the levels of achievement.



Think of multiple choice test. Which of the science criteria would you use to assess a multiple choice test? Can a student reach the maximum level of achievement?



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Standardization and reliability

- The process involves teachers meeting to come to a common understanding on the criteria and achievement levels and how they are applied. In so doing, teachers are increasing the reliability of their judgments.
- The term “reliability” used here refers to the likelihood of two different assessors producing the same judgment.

Internal standardization, if correctly carried out, can significantly increase the reliability of assessment.



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Mix and match - MYP command terms

- On the wall you will find 4 *MYP Command Terms* descriptors.
- In your envelope you have 5 *MYP Command Terms* titles.
- Match your command terms to the descriptor. There is an odd one out!



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MYP command terms

- Apply · Discuss · Outline
- Describe · Evaluate · Formulate
- Recall · Present · Analyze
- Explain · Select · Solve
- Interpret · State · Suggest
- Summarize · Document

What do they mean and how do they relate?



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Assessment using the MYP command terms

Explain

Give a detailed account

**Criterion B:
Inquiring and
designing**

7 - 8

The student is able to:

- i. **describe** a problem or question to be tested by a scientific investigation
- ii. **outline and explain** a testable hypothesis **using correct scientific reasoning**
- iii. **describe** how to manipulate the variables, and **describe** how **sufficient, relevant** data will be collected
- iv. design a **logical, complete and safe method** in which he or she selects appropriate materials and equipment



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“Best Fit” approach

The criteria work like “buckets” that fill up as students reach different levels of achievement, from the **lowest to the highest**.

We should use the “best fit” approach.



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Standardization

Using the sample of student work in your workbook:

1. Assess this piece of work individually using the criteria - **Be ready to justify your assessment.**
2. At your table group, discuss and arise at an achievement level that you all agree on along with a rationale as why.
3. Now discuss the levels awarded at your table. Can you reach agreement?



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Keep in mind...

- Command terms
- Assessing each strand
- "Best fit"



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Determining a grade

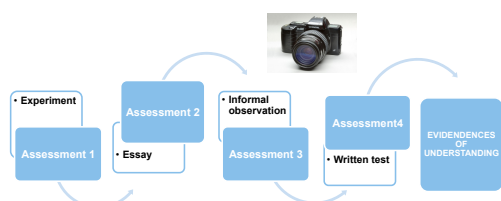
- All schools offering the MYP must use the published subject-specific criteria and achievement level descriptors to determine final internal grades.
- To arrive at a criterion levels total for each student, teachers will need to total the final achievement levels in each of the criteria.
- Subject groups **must** address **all** strands of **all** four assessment criteria **at least twice** in each year of the MYP



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Album vs. snapshot



J. McTighe and A. Carol: "Considering evidence of learning in diverse classrooms" in *Integrating differentiated instruction and understanding by design*. Page: 59-82



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Example of summative assessments:

How would you “mark” this student?

Criteria	Criterion A	Criterion B	Criterion C	Criterion D
Tasks				
Research project	6			8
Practical investigation		5	6	
Oral presentation	7			7
Case study		7	6	
Test (not multiple choice)	6		5	
Final achievement level				
Criteria Total	/32		Final Subject Grade	



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Criteria	Criterion A	Criterion B	Criterion C	Criterion D
Tasks				
Research project	6			8
Practical investigation		5	6	
Oral presentation	7			7
Case study		7	6	
Test (not multiple choice)	6		5	
Final levels	6	7	6	7
Criteria Total	/32		Final Subject Grade	

Final Subject Grade	1	2	3	4	5	6	7
Boundaries	1 - 5	6 - 9	10 - 14	15 - 18	19 - 23	24 - 27	28 - 32



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Criteria	Criterion A	Criterion B	Criterion C	Criterion D
Tasks				
Research project	6			8
Practical investigation		5	6	
Oral presentation	7			7
Case study		7	6	
Test (not multiple choice)	6		5	
Final levels	6	7	6	7
Criterion Levels Total	25 /32		Final Subject Grade	

Final Subject Grade	1	2	3	4	5	6	7
Boundaries	1 - 5	6 - 9	10 - 14	15 - 18	19 - 23	24 - 27	28 - 32



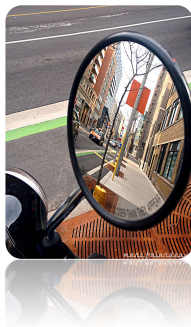
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Personal reflection

As a result of this session:

- One thing I will start doing ...
- One thing I will continue doing ...
- One thing I will stop doing



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Session 8 – Written, taught and assessed curriculum: Whole school implementation & Interdisciplinary Units



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Session objectives

- discuss the challenges of implementing authentic, contextualized, student-centered learning in a whole school environment
- recognize responsibilities of the teacher during the candidate phase



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Interdisciplinary unit

So, what is required in interdisciplinary planning?



One interdisciplinary unit per MYP year using the interdisciplinary unit planner and criteria, involving more than one subject group, e.g. Maths and Arts. The requirement is not one interdisciplinary unit per subject group.



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The challenges we face

What do you now believe is the biggest challenge you will face implementing authentic, contextualised, student-centred learning in a whole school environment when you return to school?



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The challenges we face

- Share your challenges with your table group.
- What are two difficult challenges to possibly overcome?



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Turning challenges into a strength

- As a group create an action plan for your groups two identified challenges

Challenge	Action	Resources



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How to cope with the challenges

1. Have a strategic plan
2. Refer to the guides
3. Use the OCC for advice
4. Develop a common faculty understanding
5. Ongoing professional development
6. Have a go – don't be afraid of getting it wrong
7. Ask your coordinator for support

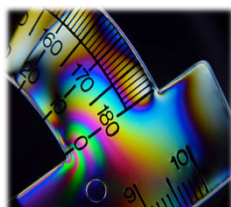


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Standards and practices

- In your workbook are the four C standards (2014).
- For each standard write down one or two practices that have been explored in the workshop.



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Final reflections

- What last questions do we have?
- Are there any challenges we still need to deal with?



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